



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,004	03/03/2008	Michael Francis	3700.P0414US	1375
23474 7590 02/12/2010 FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631				
EXAMINER KIM, TAILOR				
ART UNIT 2156		PAPER NUMBER		
MAIL DATE 02/12/2010		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/586,004

**Applicant(s)**

FRANCIS, MICHAEL

**Examiner**

TAEOR KIM

**Art Unit**

2156

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-19 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SI.08)  
Paper No(s)/Mail Date 03/03/2008  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This action is in response to the application filed 03/03/2008.

Claims 1 - 19 are pending and have been examined.

Claims 1 - 19 are rejected.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 03/03/2008 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Specification***

The disclosure is objected to because of the following informalities:

- [p.1] Misused word in the fourth paragraph is found. Examiner suggests substituting the phrase **every one** with "everyone"

- [p.1] A comma is missing in the second paragraph after **1950's**.

- [p.2] A comma is missing after the word **system** in the second paragraph.

- [p.5] Acronyms may be used in the disclosure but the definition must be defined close to its use. **SQL** is not defined.

- Throughout the specification references to fig. 3a-fig 3c are made.

However, these figures are not part of the disclosure. Fig.3d is not mentioned anywhere in the specification.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a) because they fail to show fig 3a-fig 3d as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the

Art Unit: 2156

changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: fig. 3d. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 1, 4 objected to because of the following informalities:

- Claim 1: The word **form** should be replaced with "from".
- Claim 4: The word **filtered** is not in its proper form. Examiner suggests substitution of the word to "filter" or "filtering".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 19, the phrase "expensive" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Penix et al, *Automating Component Integration for Web-Based Data Analysis*, IEEE March 2000, Vol.4, pp. 465-473 ("Penix" hereinafter).

***As per claim 1, Penix discloses means for storing configuration data defining how user selected data is to be extracted in response to a user request for data; means for generating a database query form the user request using the configuration data; means for extracting data in response to the query*** (Penix [Abstract: "Our vision is that, to construct an application, scientists will give a specification of three kinds of components: the desired data source, a data analysis filter, and a visualization device."]; [P.465: "Numerous software toolkits and libraries are available to support the construction of custom data analysis and visualization applications.]; [P.466 2<sup>nd</sup> paragraph: "Using one of these tools, scientists will provide a specification of three kinds of components: (1) the desired data source, (2) a data analysis filter, and (3) a visualization device."]; [p.470 1st paragraph: "The client may request connections to multiple heterogeneous servers including back-end servers, DBMS servers, legacy applications through the use of their native interface, such as SQL for relational databases."]);

***means for supplying the extracted data to the user; wherein the database query comprises data defining a measure to be displayed and data defining any dimensions for that measure selected by the user, and the data defining the measure and dimensions comprise a portion of the configuration data*** (Penix [P.468 3<sup>rd</sup> para.: "To support Vulcan image extraction and realignment using EIS, the format of the image data and the interface and behavior of the data analysis components must be specified."]; [P.468 4<sup>th</sup> para.:

Art Unit: 2156

"FITS files contain a header which includes metadata such as bit pixel, number of dimensions, time of imaging, object observed and telescope used.")).

**As per claim 2**, rejection for claim 1 is incorporated and further Penix discloses ***means for providing a graphical display of the extracted measure data and means for enabling a user to select a dimension associated with that measure to be displayed*** (Penix [P.467 4<sup>th</sup> para.: "There may also be additional information in the request that describes the intended data flow in the application indicating, for example, which data fields should map to data analysis parameters."]; [P.466 4<sup>th</sup> para.: "For example, a space scientist may request the image of a certain astronomical object over a specified time period, without having to specify the specific instrument or data archive where the data is to be retrieved from. The scientist could then request that these images be sent through an analysis filter that highlights certain frequencies and displays the results as a Mpeg movie.]).

**As per claim 3**, rejection for claim 1 is incorporated and further Penix discloses ***including means to enable a selected dimension of the data to be filtered by one or more user selected attributes within that dimension*** (Penix [P.466: 4<sup>th</sup> para.: "The scientist could then request that these images be sent through an analysis filter that highlights certain frequencies and displays the results as a Mpeg movie. In this case, iCIS will locate the appropriate filter, generate an adapter to allow the filter to use the image archive data format and

Art Unit: 2156

generate an adapter to feed the highlighted images into the Mpeg generation program."]).

**As per claim 5**, rejection for claim 1 is incorporated and further Penix discloses ***means for generating a database query from the user request generates each query in the same format*** (Penix [Abstract: Our current focus is on integration of data analysis filters with online data archives described using XML-based languages.]; [P.471 3rd para.: "Our proposed effort will build upon these projects by using XML-based descriptions of table formats (part of the metadata) to automatically generate adapter components that extract data from tables."]).

**As per claim 6**, Penix discloses ***storing configuration data defining how user selected data is to be extracted in response to a user request for data; generating a database query from a user request using the configuration data; extracting data in response to the query*** (Penix [Abstract: "Our vision is that, to construct an application, scientists will give a specification of three kinds of components: the desired data source, a data analysis filter, and a visualization device.]; [P.465: "Numerous software toolkits and libraries are available to support the construction of custom data analysis and visualization applications.]; [P.466 2<sup>nd</sup> paragraph: "Using one of these tools, scientists will provide a specification of three kinds of components: (1) the desired data source, (2) a data analysis filter, and (3) a visualization device.]; [p.470 1st paragraph:

Art Unit: 2156

"The client may request connections to multiple heterogeneous servers including back-end servers, DBMS servers, legacy applications through the use of their native interface, such as SQL for relational databases."]);

***supplying the extracted data to the user; wherein the database query comprises data defining a measure to be displayed and data defining any dimensions for that measure selected by the user, and the data defining the measure and dimensions comprise a portion of the configuration data*** (Penix [P.468 3<sup>rd</sup> para.: "To support Vulcan image extraction and realignment using EIS, the format of the image data and the interface and behavior of the data analysis components must be specified."]; [P.468 4<sup>th</sup> para.: "FITS files contain a header which includes metadata such as bit pixel, number of dimensions, time of imaging, object observed and telescope used."])).

***As per claim 7, rejection for claim 6 is incorporated and further Penix discloses a step of providing a graphical display of the extracted measure data and a step of displaying a user selected dimension associated with that measure*** (Penix [P.467 4<sup>th</sup> para.: "There may also be additional information in the request that describes the intended data flow in the application indicating, for example, which data fields should map to data analysis parameters."]; [P.466 4<sup>th</sup> para.: "For example, a space scientist may request the image of a certain astronomical object over a specified time period, without having to specify the specific instrument or data archive where the data is to be retrieved from. The

Art Unit: 2156

scientist could then request that these images be sent through an analysis filter that highlights certain frequencies and displays the results as a Mpeg movie.)).

**As per claim 8**, rejection for claim 6 is incorporated and further Penix discloses ***the step of filtering a selected dimension via user selected attributes within that dimension*** (Penix [P.466: 4<sup>th</sup> para.: "The scientist could then request that these images be sent through an analysis filter that highlights certain frequencies and displays the results as a Mpeg movie. In this case, iCIS will locate the appropriate filter, generate an adapter to allow the filter to use the image archive data format and generate an adapter to feed the highlighted images into the Mpeg generation program."])).

**As per claim 10**, rejection for claim 6 is incorporated and further Penix discloses ***the original step of generating a database query in response to the user request generates each query in the same format*** (Penix [Abstract: Our current focus is on integration of data analysis filters with online data archives described using XML-based languages.]; [P.471 3rd para.: "Our proposed effort will build upon these projects by using XML-based descriptions of table formats (part of the metadata) to automatically generate adapter components that extract data from tables."])).

Art Unit: 2156

3. Claims 11-15 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Qiong Luo et al., *Active Query Caching for Database Web Servers*, Computer Science Department, University of Wisconsin-Madison, May 2000, pp.92-104 ("Qiong" hereinafter).

***As per claim 11***, Qiong discloses ***storing a number of sets of chart data in a cache memory; determining whether a user input corresponds to a request for a set of chart data stored in the cache memory*** (Qiong [p.93 1<sup>st</sup> para.: "The proxy can then not only answer queries that are an exact match to cached queries, but also queries whose results are contained in the cached results of more general queries. "; [p.93 2<sup>nd</sup> para.: "If we consider a form to be a single table view and the blanks to be filled in as the columns of the single table view, queries on the form can then be treated as simple selection queries with conjunctive predicates over this single table view."]);

***and supplying a set of chart data from the cache memory in dependence on the result of the determination*** (Qiong [p.94 3<sup>rd</sup> para.: "Having these two functions, the query applet can perform active query caching, where the proxy not only answers queries that are identical to a cached query, but also answers queries that are more restrictive than a cached query."]).

***As per claim 12***, rejection for claim 11 is incorporated and further Qiong discloses ***the stored number of sets of chart data comprise recently accessed sets of chart data*** (Qiong [p.98 4th para.: "The third one is a

Art Unit: 2156

combination of the other two in that it uses reference frequency and recency as parameters of the benefit.]).

**As per claim 13**, rejection for claim 11 is incorporated and further Qiong discloses **the stored sets of chart data comprise frequently accessed chart data** (Qiong [p.96 4<sup>th</sup> para: "Secondly, if there are some hot queries during a period of time, many queries can be answered from the results of these hot queries.]); [p.98 4<sup>th</sup> para.: "The third one is a combination of the other two in that it uses reference frequency and recency as parameters of the benefit.]).

**As per claim 14**, rejection for claim 11 is incorporated and further Qiong discloses **the steps storing a number of sets of chart data stores sets of chart data up to a predetermined memory limit** (Qiong [pp.100 5<sup>th</sup> para.-101 6<sup>th</sup> para.: "The whole trace of 900K queries has 29% non-unique queries, which is the upper limit of the cache hit ratio of passive query caching with a sufficiently large cache.]).

**As per claim 15**, rejection for claim 11 is incorporated and further Qiong discloses **the step of regenerating one or more of the sets of chart data if the underlying data from the database has changed** (Qiong [p.102 2<sup>nd</sup> para.: "Challenger et al. [5] have focused on how to efficiently identify and update obsolete pages in the web server cache.]).

**As per claim 19**, rejection for claim 11 is incorporated and further Qiong discloses **the step of storing sets of chart data stores only sets of chart data the creation of which is considered expensive according to a configurable value** (Qiong [p.98 3<sup>rd</sup> para.: "Since web queries tend to return a small number of records per request, we chose not to cache any subsumed queries of a cached query. As a result, the cache hit ratio is improved because of less data redundancy in the cache."]) where larger resulting set and corresponding query is cached.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2156

4. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penix et al, *Automating Component Integration for Web-Based Data Analysis*, IEEE March 2000, Vol.4, pp. 465-473 ("Penix" hereinafter).

**As per claim 4**, rejection for claim 1 is incorporated and further Penix discloses ***including means to enable data filtered according to selection in one dimension to be filtered by a [ ] selected dimension or attributes thereof*** (Penix [P.467 4<sup>th</sup> para.: "There may also be additional information in the request that describes the intended data flow in the application indicating, for example, which data fields should map to data analysis parameters."]; [P.466 4<sup>th</sup> para.: "For example, a space scientist may request the image of a certain astronomical object over a specified time period, without having to specify the specific instrument or data archive where the data is to be retrieved from. The scientist could then request that these images be sent through an analysis filter that highlights certain frequencies and displays the results as a Mpeg movie.]; [P.466: 4<sup>th</sup> para.: "The scientist could then request that these images be sent through an analysis filter that highlights certain frequencies and displays the results as a Mpeg movie. In this case, ICIS will locate the appropriate filter, generate an adapter to allow the filter to use the image archive data format and generate an adapter to feed the highlighted images into the Mpeg generation program."])).

Penix specifically discloses, as above quoted, a filtering mechanism where user can choose attributes within dimensions to filter data. However, Penix does not specifically teach a second level of filtering mechanism. Even though a

Art Unit: 2156

second level of filtering is not specifically taught by Penix, the implementation of the filtering mechanism sheds light on the contemplation of using the filtering mechanisms to funnel down the results or to edit the results into a format requested by the user. Therefore, the use of the filter mechanism in a layered method is obvious in view of the teachings of the prior art. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the layered method of filtering into the system and method of Penix. The modification would be obvious because one of ordinary skill in the art would be motivated to return a result set that is acute to user's needs.

***As per claim 9***, rejection for claim 7 is incorporated and further Penix discloses ***the step of filtering data, already filtered according selection in one dimension, by a [ ] selected dimension or attributes thereof*** (Penix [P.467 4<sup>th</sup> para.: "There may also be additional information in the request that describes the intended data flow in the application indicating, for example, which data fields should map to data analysis parameters."]; [P.466 4<sup>th</sup> para.: "For example, a space scientist may request the image of a certain astronomical object over a specified time period, without having to specify the specific instrument or data archive where the data is to be retrieved from. The scientist could then request that these images be sent through an analysis filter that highlights certain frequencies and displays the results as a Mpeg movie.]; [P.466: 4<sup>th</sup> para.: "The scientist could then request that these images be sent through an

Art Unit: 2156

analysis filter that highlights certain frequencies and displays the results as a Mpeg movie. In this case, iCIS will locate the appropriate filter, generate an adapter to allow the filter to use the image archive data format and generate an adapter to feed the highlighted images into the Mpeg generation program.”]).

Penix specifically discloses, as above quoted, a filtering mechanism where user can choose attributes within dimensions to filter data. However, Penix does not specifically teach a second level of filtering mechanism. Even though a second level of filtering is not specifically taught by Penix, the implementation of the filtering mechanism sheds light on the contemplation of using the filtering mechanisms to funnel down the results or to edit the results into a format requested by the user. Therefore, the use of the filter mechanism in a layered method is obvious in view of the teachings of the prior art. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the layered method of filtering into the system and method of Penix. The modification would be obvious because one of ordinary skill in the art would be motivated to return a result set that is acute to user's needs.

5. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiong Luo et al., *Active Query Caching for Database Web Servers*, Computer Science Department, University of Wisconsin-Madison, May 2000, pp.92-104 (“Qiong” hereinafter) and further in view of Keller, Jr. et al. (US 6772199; “Keller” hereinafter).

**As per claim 16**, rejection for claim 11 is incorporated and further Qiong discloses **the step of removing the least recently used sets of chart data if the number of sets of chart data stored reaches a [ ]** (Qiong [p.98 4<sup>th</sup> para.: "There are three cache replacement schemes available in our implementation: LFU (Least Frequently Used), LRU (Least Recently Used), and benefit-based.]; [pp.100 5<sup>th</sup> para.-101 6<sup>th</sup> para.: "The whole trace of 900K queries has 29% non-unique queries, which is the upper limit of the cache hit ratio of passive query caching with a sufficiently large cache.]).

Qiong discloses a cache management module where data can be removed from cache to be replaced with other data. Qiong does not specifically disclose **predetermined limit** where data is removed when data stored reaches a certain upper limit. However, Keller in an analogous art discloses removing and replacing data stored in cache when cache becomes full (Keller [Abstract: " After the cache is full or nearly full, subsequently retrieved objects are stored by casting out one or more objects which are not exempt from replacement according to a specified replacement algorithm, such as Least Recently Utilized, or by casting out any object or objects, if all objects in the cache are designated as exempt from replacement."])). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the teachings of Keller into the method and system of Qiong. The modification would be obvious because one of ordinary skill in the art would be motivated to improve cache hits and reduce wide area net work traffic (Qiong [Introduction]).

**As per claim 17**, rejection for claim 16 is incorporated and further Qiong discloses **the step of removing the least recently used sets of chart data comprises removing more than one set of chart data** (Qiong [4<sup>th</sup> para.: "There are three cache replacement schemes available in our implementation: LFU (Least Frequently Used), LRU (Least Recently Used), and benefit-based."]) where replacement is used to remove data.

**As per claim 18**, rejection for claim 11 is incorporated and further Qiong discloses **the step of storing sets of chart data stores only sets of chart data of less than a predetermined [ ]** (Qiong [4<sup>th</sup> para.: "There are three cache replacement schemes available in our implementation: LFU (Least Frequently Used), LRU (Least Recently Used), and benefit-based."]).

Qiong discloses storing chart data depending on predetermined criteria as above cited. Qiong does not specifically teach the predetermined criteria to be a size. However, Keller discloses using size as a criteria for replacement (Keller [Abstract: "Objects retrieved from the network by a server are stored within a cache associated with the server and selected objects are designated as temporarily exempt from replacement based upon a preselected criterion, such as size or mandated quality of service for the client which requested the object."]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the teachings of Keller into the method and system of Qiong. The modification would be obvious because one of ordinary skill in the art would be motivated to improve cache hits and

Art Unit: 2156

reduce wide area network traffic by filtering data using size as criteria (Qiong [Introduction]).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shaul Dar et al., ***Semantic Data Caching and Replacement*** - This study pertains to cache management. In more detail, it pertains specifically to the ability to delete multiple data sets upon management configuration.

Ikeuchi et al. (US 20010002456), ***On-Vehicle Information Processor with Map Data and Map Data management*** – [0062 and 0016] relates specifically to storing data in cache that is smaller than a predetermined size.

Robertson et al. (US 5956744), ***Memory Configuration Cache With Multilevel Hierarchy Least Recently Used Cache Entry Replacement*** – details methods of replacing cache memory data items and priority level stamping to the data items for cache management.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAE LOR KIM whose telephone number is (571)270-7166. The examiner can normally be reached on Monday - Thursday (7:30AM-5PM) EST.

Art Unit: 2156

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, PIERRE VITAL can be reached on 571-272-4215. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8166.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Taelor Kim  
Patent Examiner  
Art Unit 2156  
Dated: 1/26/2010

/B. N. T./  
Primary Examiner, Art Unit 2162

/Pierre M. Vital/  
Supervisory Patent Examiner, Art Unit 2156